

REMARKS

1. **Status Of The Claims.** Claims 1-3, 8, 31, 39-52 and 62-72 are pending in the subject application. Claims 41-52 and 62-64 are withdrawn from consideration.

Claims 4-30, 32-38, 53-61, 69, and 70 have been without prejudice canceled. Applicant respectfully reserves the right to pursue any non-elected claims, canceled or otherwise unclaimed subject matter in one or more continuation, continuation-in-part, or divisional applications.

Claims 1-3, 31, 39, 40, 65-68, 70 and 72 have been amended without the addition of any new matter.

2. **The Claim Objections Are Overcome.** In claims 1-3, 8, 31, 39, 40, and 65-72 were objected based on informalities.

-In claim 65, “obtaining a sperm cell from a male of a species of mammal” has been deleted.

-In claim 1, “generating . . . a sheath fluid . . . ” has been deleted.

-In claims 1 and 65, “selecting at least one desired sperm cell fertility . . . ” has been deleted.

-In claim 66, “a species of mammal” has been deleted.

-As to claims 3 and 67, Applicant has amended claim 3 to differentiate between a “fluid stream” in which sperm cells are entrained and “a sheath fluid stream” which surrounds the fluid stream. Applicant believes this makes clear that there are two different streams.

-As to claim 8, Applicant has combined the limitation into claim 1 making moot the objection.

-Claim 69 has been canceled 1 making moot the objection.

Applicant believes that cancellation or amendment to claims 1-3, 8, 31, 39, 40, and 65-72 addresses each objection. Applicant respectfully requests withdrawal of the objections.

3. **The Rejections Under 35 U.S.C.A. Section 112, Second Paragraph Are Overcome.** The Examiner has rejected claims 1-3, 31, 39, 40, and 65-72 under Section 112, second paragraph.

-In claims 1 and 65, “oocyte blastocyst rate” has been deleted.

-In claims 1 and 65, in claim 1 “altering said flow characteristics of said fluid stream to adjust fluid stream pressure. . .” has been amended to recite --adjusting said pressure of said fluid stream” and in claim 65 the recitation has been deleted.

-In claims 1 and 65, “subjecting said sperm cell. . .” has been deleted.

-In claims 1 and 65, in claim 1 the omitted step of “collecting the sperm cells. . .” has been addressed by the recitation “collecting said sperm cells separated, thereby generating a sperm cell insemination sample having said at least one sperm cell fertility characteristic” and in claim 65 the claim has been made ultimately dependent on claim 1.

-In claim 31, the recitation of “said pregnancy rate of a female. . .” has been deleted.

Applicant believes the amendments to claims 1-3, 31, 39, 40, and 65-72 address each concern raised under Section 112, second paragraph. Applicant respectfully requests withdrawal of the rejections under Section 112, second paragraph.

4. **The Rejections Under 35 U.S.C.A. Section 102 Are Overcome.** The Examiner has rejected claims 1-3, 8, 33, and 65-69 under Section 102(b) as being anticipated by Rath et al. (*J. Anim. Sci.* 77:3346-3352 1999) (“Rath”).

A claim is anticipated only if “each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631 (Fed. Cir. 1987); *MPEP 2131*. “The identical invention must be shown in as complete detail as is contained. . .in the claim.” *Richardson v. Suzuki Motor Co.*, 868 F.2d 1225, 1236 (Fed. Cir. 1989). Moreover, the elements must be arranged as required by the claim. *En re Bond*, 910 F.2d 831 (Fed. Cir. 1990); *MPEP 2131*.

Claims 8 and 33. Claims 8 and 33 have each been canceled making any response as to those claims moot.

Claims 1-3 and 65-69. The Examiner indicates that Rath teaches “the fluid stream flow through the adjustment of pressure to using high speed sperm sorting with a fluid sheath pressure of 2.81 kg/cm² to improve sorting and fertility over standard speed sorting. *Office Action at Page 3.* Applicant believes that this interpretation of what Rath teaches is overly broad. Applicant specifically refutes that Rath teaches or suggests that adjustment of pressure improves fertility characteristics over standard sorting. Rather, Rath teaches comparative effect of two different media which were significant. *Rath at Page 3349, col. 1 (“media effects were significantly different”).*

Applicant claims a fluid stream (claim 1) and a sheath fluid stream (claim 3). These are two different streams. The fluid stream is exposed to a pressure which is adjusted to confer the benefit of controlling at least one cell fertility characteristic of the entrained sperm cells.

Rath teaches that, “Instrument sheath pressure was set at 2.81 kg/cm².” Rath at Page 3348, Col 1. (emphasis added).

Rath does not teach “adjusting the pressure of the fluid stream” as claimed.

Applicant has amended claims 1 and 3 to make clear that the fluid stream is different from the sheath fluid stream. The amendment is supported by the specification at Paragraph 0024, Publication No. 20060121440 (“sperm cells entrained in the fluid stream”) and Paragraph 0027 (“Sperm cells are deposited within a nozzle (2) in a manner such that sperm cells are surrounded by a sheath fluid (3.”) and further by Paragraph 0028. (“The sheath fluid (3) is usually supplied by some sheath fluid source (4) so that as the sperm cell source (1) supplies sperm cells, the sheath fluid (3) is concurrently fed through the nozzle (2.”)

Because Rath does not teach all the elements of claim 1, therefore claims 1-3 and 65-69 are not anticipated. Applicant respectfully requests that the anticipation rejection based on Rath be withdrawn.

4. The Rejections Under 35 U.S.C.A. Section 103(a) Are Overcome. The Examiner has rejected claims 31, 39 and 70-72 as being unpatentable over Rath in view of United States Patent No. 4,683,213 to Ax (“Ax”).

To reject a claim based on combining prior art elements according to known methods, the office must resolve the Graham factual inquires and provide a finding that the prior art included each element claimed. *MPEP §2143 A (1)*. One skilled in the art could have combined the elements as claimed by known methods, and that in combination, each element performs the same function as it does separately. *MPEP §2143 A (2)*. The combination yielded nothing more than predictable results to one of ordinary skill in the art. *MPEP §2143 A (3)*. If any these findings cannot be made, then this rationale cannot be used to support a conclusion that the claim would have been obvious to one of ordinary skill in the art. *MPEP §2143 A (1)*.

Additionally, the proposed modifications cannot render the prior art unsatisfactory for its intended purpose. If the proposed modification would render the prior art unsatisfactory for its intended purpose, then there is no suggestion to or motivation to make the proposed modification. *MPEP §2143.01 V; In re Gordon, 733 F.2d 900 (Fed. Cir. 1984)*.

Additionally, the proposed modification cannot change the principal of operation of a reference. If the proposed modification or combination of the prior art would change the principal of operation of the prior art being modified, then the teachings of the references are not sufficient to render the claims obvious. *MPEP §2143.01 VI; In re Ratti, 270 F.2d 810, 123 (CCPA 1959)*.

Claim 71 has been canceled making any response to that claim moot.

Combination of Prior Art References. The combination of Rath and Ax does not teach all the elements of the claimed invention for the reasons set out in the above remarks. Each of claims 3, 39 and 70 and 72 are made ultimately dependent upon claim 1 and therefore also include the limitations of claim 1 as amended which are not taught by the combination of Rath and Ax. Accordingly, *MPEP §2143 A (1)* is not satisfied.

Additionally, modifying the combination of Rath and Ax to achieve the claimed invention would require a substantial change in the principal of operation of the Rath reference from merely setting the pressure of the sheath fluid stream at a fixed pressure to that of the claimed invention of adjusting the pressure of the fluid stream entraining the sperm cells to achieve the effect of controlling at least one sperm cell fertility characteristic. Because the principal of operation of Rath would be changed, the teachings of the references are not sufficient to render the claims obvious under *MPEP §2143.01 VI*.

Simple Substitution. The combination of Rath and Ax does not meet the criteria of a simple substitution because the substituted components and their functions were not taught by the prior art as required for a *prima facie* simple substitution under the rules. Additionally, the results of the substitution would not have been predictable, Rath teaches a wide variety of machine, chemical, and media parameters (“argon ion laser”, “orienting nozzle”, “beveled needle”, type of “sheath fluid PBS.1 BSA and EDTA”, “pH 7.2”, “antibiotics”, “sheath pressure”, “flow rate”, and “fertilization media”). The function of adjusting the fluid stream pressure as claimed is not taught and the list of parameters without guidance from the combination of references affords nearly limitless experimentation rather than simple substitution.

Existence of Some Teaching to Modify the Reference. Because the combination of Rath and Ax does not teach or suggest adjusting the pressure of the fluid stream as claimed to control sperm cell fertility characteristics, the combination does not provide the requisite motivation to modify the combination of Rath and Ax to achieve the claimed invention as required under the exemplary rational “G”.

Based on the forgoing, Applicant does not believe that the combination of Rath and Ax supports a *prima facie* case of obviousness with respect to claims 1-3, 31, 39, 40, 65-68, 70 and 72 as amended. Applicant respectfully requests that the rejection under 103(a) based on the combination of Rath and Ax be withdrawn.

CONCLUSION

The applicant has without prejudice canceled claims 4-30, 32-38, 53-61, 69, and 70. Claims 1-3, 31, 39, 40, 65-68, 70 and 72 have been amended without the addition of any new matter. The applicant believes that the amendments and arguments provided overcome the objections, Section 112, second paragraph, and Section 102 and Section 103 concerns as to each of claims 1-3, 31, 39, 40, 65-68, 70 and 72 as amended. Applicant believes that each of the claims is now in condition for allowance and Applicant requests allowance of same.

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Respectfully Submitted,

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